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ABSTRACT

This proposed study will examine collaborative organizational interactions and the effectiveness of collaborative projects and other joint activities between institutions of higher education and external groups and organizations. The project will use B. Gray's theory delineating three key conditions for collaborative interaction: the degree to which (1) problems, issues and tasks are worked out on the basis of participants' interest or stake in the situation; (2) decisions and problem resolution are achieved by consensus; and (3) trust and positive relationships exist. The project will be a correlation study designed to determine if factors that define collaboration can be identified and if they correlate with effectiveness or outcome measures of the collaborative activity. The study will be based on a sample of 15 inter-organizational collaborations. Internal validity threats will be limited by documenting and analyzing similarities and differences based on the data gathered during the screening phase of document content analysis and focused interviews. The study will gather data through site visits at each location where a collaborative active measure and an effectiveness measure will be administered. Three instruments will measure Gray's three variables: the Work Patterns Profile, Bales' Interaction Process Analysis, and Hemphill's Index of Group Dimensions. (Contains 14 references.) (JB)

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Organizational Effectiveness in Higher Education and Collaborative Interaction with External Organizations: A Research Prospectus

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Organizational Effectiveness in Higher Education and Collaborative Interaction with External Organizations: A Research Prospectus

Introduction

Objective. The purpose of this prospectus is to outline a research study that would examine the collaborative form of organizational interaction as it relates to the effectiveness of collaborative projects and other joint activities between institutions of higher education and external groups and organizations. The importance of the problem, previous research, study design, and research methods are considered.

Justification. The viability of American colleges and universities in recent years has become increasingly related to how effectively these institutions form relationships and carry out joint activities with external groups and organizations. An institution's reputation and public image is affected not only by the perceptions of its current students and alumni but also by the nature, extent and success of its service, support and partnership activities in its local, regional, national and world communities. The perceptions that individuals and the general public have of higher education influence decisions on college choice, voluntary financial giving, and willingness to support public taxation for higher education. At the same time, in exchange for support from public funds, public institutions are expected to make their services and expertise available to the community. Higher education has an interest, therefore, in identifying and engaging in the most suitable and effective means available for interacting and working with external organizations.

Proponents of collaborative forms of inter-organization interaction believe it offers advantages over others in fostering achievement of intended results and forming foundations for ongoing productive relationships on other projects and activities between the same organizations. If research can indicate that the presence and degree of collaborative interaction between higher education institutions and external organizations may be positively

related to the level of accomplishment of intended results, then higher education could be encouraged to consciously adopt collaboration in an increasing number of outreach and service activities.

Previous Research. Practically all of the reported research and descriptive literature on collaborative interaction between colleges and universities, on the one hand, and external groups and organizations, on the other, concerns joint research projects, demonstration projects, or "school improvement" projects - all between higher education institutions and elementary or secondary schools or school systems. In their literature review for a study published in 1992, Brookhart and Loadman cite sources describing 53 collaborative school / university projects and identify 45 other studies of collaboration. Brookhart and Loadman focus on organization culture as related to the success of collaboration and review the history and development of school-university collaboration; summarize the literature identifying, classifying and evaluating different forms of collaboration; and organize the 53 reported collaborative projects into five types. The Brookhart and Loadman study is useful because it is recent and comprehensive in its listing of the published reports and studies on collaborative projects. In a study aimed at reviewing research on collaborative organizational interaction in education, Hord (1986) identified six dimensions on which the degree of collaboration between organizations might be assessed. The value of Hord's article is that it focuses specifically on the available research on collaboration among educational organizations.

While the volume of literature on collaboration by colleges and universities is testimony to its popularity, there appears to be a very small amount of empirical or quantitatively based research. Brookhart and Loadman (1992) cite only two out of over 100 in their review. In searching for quantitatively oriented and experimental studies in ERIC and in the reference lists of several works on organizational collaboration, I could only find descriptive studies, general theoretical works, and case studies. As a whole, the case studies are narrative and descriptive and not rigorous or analytical. Practically all the studies, including the few

quantitatively oriented ones, assume that it is "good" to have collaboration and concentrate on identifying conditions that may enhance or inhibit acceptance and use of collaboration (Brookhart, 1989). These studies do not examine how collaboration relates to effectiveness and accomplishment of expected outcomes.

At the same time, the studies that report on higher education collaboration are almost entirely in the area of university-school collaboration. There appears to be no significant reported research on university collaboration with other organizations that are important to its mission: business, government and local community organizations. An exception is reports and studies on "research collaboration," but these have a project or topical focus rather than the organizational focus that is of interest here.

Theoretical Considerations. A review of the literature indicates that there are two theoretical issues that must be addressed. First, the literature provides many different views, interpretations and definitions of the construct "collaboration." Therefore, what is to be defined as organizational collaboration for the purposes of this study must be precisely defined. Second, the educational research literature appears to offer no sufficiently rigorous empirical or quantitative examples of study designs on the relationship of collaboration to effectiveness that can be replicated. This suggests that we either look for appropriate research designs in other fields of organizational research or propose a design that addresses the requirements of our research questions.

A search of recent literature in the behavioral sciences reveals several published studies focusing on alternative theoretical models of organizational collaboration. In two articles, Gray and Wood (1991, 1991) provide a theoretical overview and a summary of nine articles contributing to recent theory development through analysis of case studies. In other publications, Gray elaborates on an analytical framework for studying collaboration between organizations and provides specific characteristics and examples which, to Gray, distinguish collaboration from other forms of organization interaction (Gray, 1985, 1989). This research

prospectus, therefore, will use Gray's model of collaboration to define the variable related to the presence and degree of collaboration.

For the second theoretical issue - determining what research designs, if any, have been used to explore similar research questions outside the field of education - a review of recent business research literature shows that correlation studies have been used to assess the relationship between collaborative behavior between buyers and sellers in business transactions and the overall efficiency and satisfaction with these activities (Gemunden, 1985; Kutschker, 1985). Unless conditions permit quasi-experimental designs to be applied to studies of organizational collaboration, it appears the only feasible alternative may be a correlation study modeled somewhat along these lines.

A Research Proposal

Problem Statement. The continuing viability of higher education institutions depends to a large extent on their ability to achieve effective, successful interaction on activities of mutual interest with a variety of external organizations. Inter-organizational collaboration has theoretical merit as a form of interaction that facilitates success and effective ongoing relationships. The research problem is to determine whether we can identify examples of successful organizational collaboration in higher education to support the case that institutions should attempt to apply this form of interaction in as many of their joint efforts with external groups and organizations as appropriate and feasible.

Research Questions. The existing documentation on the inter-organizational experiences of higher education institutions primarily concerns interaction with elementary and secondary schools and school systems. However, because the literature review was able to identify few rigorous empirical studies of the existence and effects of collaborative relationships, this project proposes an exploratory study to address the following research questions:

1) Can the theoretical construct "inter-organizational collaboration" be defined in operational terms and validated in the context of actual cases of college and university interaction with external organizations?
2) Is there a relationship between the degree of collaboration and achievement of the desired outcomes of the collaborative project or activity?

Research Design. This project could be designed as a correlation study. Because there appears to be little quantitative research available in this field, the study would be an attempt to determine if factors that define collaboration can be identified and if they correlate with effectiveness or outcome measures of the collaborative activity. It is inappropriate at this stage of development of the research to attempt to conduct an experimental or quasi-experimental study. The construct "collaborative interaction" has not been validated in repetition studies, and few if any previous exploratory studies have correlated collaboration with effectiveness. Also, it would be difficult and expensive to conduct an experimental study because collaboration is by definition an ongoing inter-active process in a real-world setting, which may make simulation or control impossible under experimental conditions. However, recent studies of organizational collaboration in business settings using the correlation method suggest that this approach may be appropriate and useful for a study of the relationship between collaboration and effectiveness in the organizational interactions of higher education (Gemunden, 1985; Kutschker, 1985).

Before actual examples of collaborative organization interaction from the potential sample would be selected for the study, an effort could be made to determine to what extent the interaction meets the criteria of Gray's definition. The goal is to find a purposive sample of fifteen examples of inter-organizational collaboration involving a higher education institution. A purposive sample is necessary because even though a project or activity may call or title

itself "collaborative," actual collaborative interaction may not exist, or it may be practiced only to a minor degree. This preliminary screening will be done by gathering data through the following procedures:

1) structured content analysis of a random sample of key documents, contracts, other founding agreements, internal memos, operating documents, and any reports that may have been produced as a result of the collaborative activity;
2) focused interviews of key participants.

In addition to identifying collaborative arrangements that most closely fit Gray's definition, this review may turn up subsidiary research questions or variables that are not apparent before the project begins. Although a formal attempt at addressing the research questions using different research techniques - triangulation - is not being proposed, information gathered during the screening interviews and content analysis may be helpful later in interpreting the data generated from the study.

As variables related to the presence and degree of collaboration, the study will include three key conditions of collaboration from Gray's theory of collaborative interaction:

1) the degree to which problems, issues and tasks are worked out on the basis of participants' interest or stake in the situation;
2) the degree to which decisions and problem resolution are achieved by consensus;
3) the degree to which trust and positive relationships exist.

The variable representing effectiveness will be the degree of achievement of objectives or expected outcomes of the task, project or venture for which the collaborative arrangement exists. Each individual collaboration variable will be correlated with the effectiveness variable

using the product-moment correlation coefficient. Then, factor analysis and multiple regression will be applied to determine how strongly various combinations of collaboration variables vary with changes in the effectiveness variable. The factor analysis will also assist in validating the existence of the underlying assumed construct - collaboration. All correlations will be tested for statistical significance. First, the collaboration variables and effectiveness variable for each of the fifteen subject organizations will be correlated independent of the others. Then, scores across all fifteen organizations will be averaged and correlated.

The greatest threat to the internal validity of this design is the lack of control over variables, other than those of interest, that may be affecting performance on the effectiveness variable. Lack of control is present because this is not an experimental study in which application of the treatment (collaboration) and exclusion of other variables is controlled. Also, in performing research on actual working groups and organizations in field settings, there is little control over differential selection and the resulting impact on measurement caused by organizations being different before the research starts. Due to the fact that the subject organizations will be in different physical locations and settings, history and maturation effects will also threaten internal validity. Of some of the remaining potential threats to internal validity, testing, statistical regression, instrumentation, mortality, treatment diffusion, rivalry, compensatory equalization and demoralization are not expected to be threats because the design does not involve individuals as subjects.

In order to take some account of the potential internal threats and the influence they may have on observations of the effectiveness variable, the sample organizations' settings and collaborative environments will be documented and analyzed for similarities and differences based on the data gathered during the screening phase of document content analysis and focused interviews.

Population of Interest. Because the area of interest is whether collaborative interaction is effective for higher education institutions in relationships with outside organizations, the population of interest is all higher education institutions.

Accessible Population. Due to the fact that: 1) this is an exploratory study with a purposive sample - only institutions that can be identified as having collaborative interaction according to Gray's criteria will be studied; and 2) that there are practical limitations on gathering data from some institutions - distance, inability or refusal to provide data or access - the accessible population is limited to those cases of collaborative organization that can be initially identified from published sources. For this purpose, potential sources are:

1) listings and catalogues of completed and ongoing collaborative projects published by public interest groups and professional associations (for example - Wilbur, Lambert, and Young, 1988);
2) published case studies of collaboration - examples are Sirotnik and Goodlad (1988) and Trubowitz (1984).

In addition to providing potential subjects for this study, the available case studies can provide preliminary information for the purposive sample screening process. At the same time, however, none of the published case studies that have been identified are sufficiently rigorous or quantified on their own to provide the kind of data needed for the proposed study.

Sample. The sample of higher education institutions with recent or ongoing collaborative interaction with external organizations could be identified from the accessible population described above. Although preliminary screening procedures will be used to select subjects that appear to have collaborative relationships according to the criteria established for this study, the intent will be to include a variety of different combinations of higher education / external organizations in the sample. Although a sample size of at least thirty is usually recommended for correlation studies, due to the time and other resources required for

preliminary screening (content analysis and focused interviews) and for carrying out the research on the selected sample, it will be feasible to include no more than fifteen examples in the actual study. At both the preliminary screening and actual research stages, permission to conduct the study will be requested from appropriate organization administrators and project directors. While they will not be provided a detailed research plan, they will be given information on the purpose of the study, the documentation and access to employees and other participants that will be needed, and, after study completion, a summary of the results.

There are two major threats to external population validity created by the sampling procedure. One is that the preponderance of higher education collaborative relationships in recent years, including the great majority of examples reported in the literature, is between higher education and schools or school systems. The potential threat is that these arrangements may not be typical of all collaborative arrangements that higher education may have had recently or experience in the future. Another more general threat is the non-randomness of the sample as whole. We will not randomly select from all situations involving higher education collaboration. Also, we will not randomly select from all higher education institutions, whether they have collaborative interactions or not. This could pose a threat because there may be conditions somewhat common to institutions that do not have these interactions which could limit the general applicability of the study's findings.

This design also poses certain potential threats for the ecological validity of results. Since the treatment is not experimental, independent variables are not defined and controlled, and, therefore, the precision with which the treatment can be replicated is limited. Key participants in the organizations we are studying will be aware of our presence and the fact that we are conducting a study - this could bring about influences from the Hawthorne, novelty and disruption effects. We will also have to be concerned about controlling experimenter bias as well as the potential effects of how generalizable the results are from the particular measures of the effectiveness variable we select. Finally, the interaction of history with the

timing of the measurements is a potential threat, as internal and external events may influence the measurements that are made.

An attempt will be made to limit and better understand the extent of some of these threats. During sample selection an effort will be made to include cases not only of university - school collaboration but also university - business collaboration, partnerships between universities and community organizations, and others. Also, those conducting the screening focused interviews and gathering other data will be monitored in order to minimize threats to ecological validity.

Data Gathering. After the fifteen target organizations and collaborative projects are selected and permission is granted from appropriate authorities to proceed with data gathering, two separate weeks will be scheduled at each site, with approximately three weeks separating the two on-site weeks at each location. In consultation with on-site project directors, the first week at each site will intentionally be scheduled at an anticipated time of intensive activity (negotiating sessions, planning sessions, evaluation meetings, etc.). During this first week, the measures of level of collaborative activity will be administered. The second week of on-site work will concentrate on administration of the effectiveness measure.

Instrumentation. The three variables identified from Gray's theory as indicating the existence of collaboration will be measured by three separate instruments. The degree to which key participants' interests and their stake is considered in decision making and problem solving will be measured by the Work Patterns Profile (Miller, 1991). This is a paper and pencil instrument to be completed by the collaborative project participants themselves. It allows individuals to rate the percentage of time they spend on each of several key managerial functions. Test-retest reliability on dimensions measured by the profile is reported to be as high as .83. Sources for validity studies of the instrument are cited, but no validity data is provided in the source referenced for this study proposal (Miller, 1991).

The degree to which consensus building is used will be assessed using Bales' Interaction Process Analysis (Miller, 1991). Using Bales' instructions, observers / interviewers will be trained to use the instrument as a guide to structured observation of group meetings and for structured interviews of key participants. Based on reported research on the use of this instrument, inter-observer reliability of between .75 and .95 can be expected (Miller, 1991), and its face validity is critiqued by Lake, Miles, and Earle (1973).

The third collaboration variable, trust and positive relationships, will be measured by using Hemphill's Index of Group Dimensions (Miller, 1991). This instrument will be completed by collaborative project participants and will provide scores on degree of strength of several dimensions related to trust and positive relationships. The instrument's authors report split half reliability of from .59 to .87; research on agreement between different participants' assessment scores of the same group range from .53 to .74. Lake, Miles, and Earle (1975) also critique the reliability of this measure.

The organization / project effectiveness variable will be measured by constructing one or more rating scales for this particular study. First, transcripts from the pre-screening focused interviews and the content analysis of key documents for each subject organization selected for the study will be reviewed to identify no more than three important organization / project objectives or expected outcomes. Second, an objectives / outcomes rating scale will be constructed, with the same scale applied to each identified objective or outcome. With wording depending on each particular effectiveness measure, descriptive statements will be developed that briefly describe the rating at each rating level.

Third, two interviewers will be trained in the use of the rating scales (these interviewers will be different from the ones used in rating one of the collaboration variables, as mentioned above, because using the same individuals for both may build in a systematic bias to over- or under-rate either the collaboration variable, the effectiveness variable, or both). The rating scales will be pilot tested in settings similar to what will be encountered in the subject

organizations. The pilot test will be carried out by the interviewers trained for this phase of the project. The scales, the definitions at individual rating levels and instructions for their use will be modified if necessary based on the pilot test if it is determined that some components are difficult to understand or apply, or if the rating scale instructions are unclear. Also, the interviewers will be observed and evaluated during the pilot test and provided feedback and suggestions for adjusting their approach and interview style if necessary. The actual interviews for the project will be conducted with key organization / project leaders and key representatives of external client groups served by the collaborative project.

Intervention. Since this is a correlation research design, there will be no controlled or experimental intervention. The intervention of interest will have already occurred in the subject organizations - the use of collaborative organization interaction processes.

Ethical Considerations. Because groups and organizations, not individuals, are the subjects of the proposed research, ethical considerations and safeguards will need to receive relatively little attention. However, permission will be requested before any research is conducted within an organization, and the purpose and use of all instrumentation will be reviewed before administration. In addition, a summary of the results, findings and conclusions will be shared with key organization representatives.

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